

Authors

Jitendra V. Dave

Data Processing Division, Palo Alto, California

Dr. Dave is a staff member in the Palo Alto Scientific Center where his current technical interests include modeling of radiation transfer in the atmosphere with application to the use of solar energy and the effect of pollutants on climate. He joined IBM in 1967, having previously worked as a research assistant at the Physical Research Laboratory, Ahmedabad, India, from 1949 to 1957, and as a visiting assistant professor and research physicist in the Department of Meteorology, University of California, Los Angeles, from 1957 to 1960. He also worked as a research assistant in the Department of Meteorology, Imperial College, London, England from 1960 to 1962. Dr. Dave was a program scientist at the National Center for Atmospheric Research, Boulder, Colorado from 1962 to 1967, and an affiliate associate professor in the Department of Meteorology, Florida State University, Tallahassee from 1966 to 1968. His education includes a B.S. in physics and mathematics in 1948, an M.S. in physics in 1952, both from the Bombay University, India, and a Ph.D. in physics in 1957 from the Gujarat University, India. He is coauthor of the books *Tables Related to Radiation Emerging from a Planetary Atmosphere with Rayleigh Scattering and Scattered Radiation in the Ozone Absorption Bands at Selected Levels of a Terrestrial, Rayleigh Atmosphere*.

Bernard Dimsdale

Data Processing Division, Los Angeles, California

Dr. Dimsdale is an industry consultant at the Los Angeles Scientific Center. He is currently working on applications of numerical geometry to problems in manufacturing, as well as to the field of biostereometry. He received a Ph.D. degree in mathematics in 1940 from the University of Minnesota, Minneapolis. Dr. Dimsdale joined IBM in 1956 as a member and later manager of the Los Angeles Data Processing Center. Other assignments included managing programming for Project Mercury, i.e., for the inventory management project now known as IMPACT. He is a member of the American Mathematical Society, the Mathematical Association of America, the Society for Industrial and Applied Mathematics, the American Association for the Advancement of Science, the Association for Computing Machinery, and Sigma Xi.

Malcolm C. Easton

Research Division, Yorktown Heights, New York

Dr. Easton is a member of the storage management analysis and algorithms group at the Thomas J. Watson Research Center, where he joined IBM in 1973. His current technical interests center on methods for evaluating performance of hierarchical storage systems. He received a B.S. in physics in 1964 from Massachusetts Institute of Technology. In 1972 he received an M.S. and in 1973 a Ph.D., both in applied mathematics, from the State University of New York at Stony Brook. In 1966 and 1967 he was affiliated with the Downstate Medical Center and from 1967 to 1970 with New York Medical College, both in New York City. At each institution he served as a faculty member, carrying out research and development in the field of medical applications of computers, supervising a group of scientific programmers, and teaching occasional courses.

Ralph L. Engle, Jr.

New York Hospital-Cornell Medical Center, New York, New York

Dr. Engle is Professor of Medicine and Public Health at Cornell University Medical College. His current work includes data management and computer aids to decision making in medicine. Before taking his present post in 1967 he was Chief of Hematology in the Department of Medicine. Dr. Engle received a B.S. degree from the University of Florida, Gainesville, in 1942 and an M.D. degree from Johns Hopkins University School of Medicine in 1945. He is a fellow of the American College of Physicians, the New York Academy of Medicine, the New York Academy of Sciences, the Society of Experimental Biology and Medicine, the American Association for the Advancement of Science, the Harvey Society, and the Society of the Sigma Xi; and he is a member of the American Medical Association, the New York County and State Medical Societies, the American Federation for Clinical Research, the American Physiological Society, the American Society of Hematology, the International Society of Hematology, the New York Society for the Study of Blood, the Association for Computing Machinery, the American Society for Information Science, the American Public Health Association, and the American Clinical and Climatological Association. Dr. Engle is coauthor of *Immunoglobulinopathies (Immunoglobulins, Immune Deficiency Syndromes, Multiple Myeloma, and Related Disorders)*, published in 1969. From 1952 to 1957 he was a Markel Scholar in Medical Science.

Betty J. Flehinger

Research Division, Yorktown Heights, New York

Dr. Flehinger is manager of environmental sciences in the General Sciences Department at the Thomas J. Watson Research Center. She joined IBM in 1957 at the Watson Laboratory in New York City, where she was manager of reliability from 1960 to 1961. From 1962 to 1971 she was manager of probability and statistics in the Mathematical Sciences Department. Since 1965 she has been affiliated with Cornell University Medical College, where she is currently Adjunct Professor of biostatistics, and Memorial Hospital-Sloan Kettering Cancer Center, where she is consultant in cytology. She has been concerned with problems in the design of clinical trials and computer aids to diagnosis. She received an A.B. from Barnard College in 1941, an M.A. in physics from Cornell in 1942, and a Ph.D. in applied mathematics from Columbia in 1960. She is a member of the Institute of Mathematical Statistics and a fellow of the American Association for the Advancement of Science.

Paul Halpern

Data Processing Division, Palo Alto, California

Dr. Halpern is a member of the atmospheric physics group at the Palo Alto Scientific Center, where he joined IBM in 1968. He has published papers in the fields of dynamic meteorology, air pollution simulation, terrestrial radiative transfer, and solar-energy harvesting. He received a B.S. from the City College of New York in 1961, an M.S. from New York University in 1964, both in meteorology, and a Ph.D. in atmospheric physics from the University of California, Davis, in 1975. Dr. Halpern is a member of the American Meteorological Society and the American Geophysical Union.

Chung W. Ho

Research Division, Yorktown Heights, New York

Dr. Ho is a staff member in the applied research department at the Thomas J. Watson Research Center, where he joined IBM in 1967. His current technical interests include computer-aided circuit analysis and design and the design of LSI circuits and systems. Prior to joining IBM he was a staff member of the Electronics Research Laboratory, University of California, Berkeley, in 1963, and in 1966 he was an acting assistant professor in the Department of Electrical Engineering. Dr. Ho received the B.S. degree in electrical engineering from National Taiwan University, Taipei, Taiwan, China, in 1961, and the M.S. and Ph.D. degrees from the University of California, Berkeley, in 1963 and 1966, respectively. He is a member of the Institute of Electrical and Electronics Engineers. Dr. Ho received an IBM Outstanding Contribution Award and an IBM Invention Achievement Award in 1975.

Keith L. Johnson

Data Processing Division, Los Angeles, California

Mr. Johnson is an advisory programmer at the Los Angeles Scientific Center where he is currently working on a numerical geometry system with application in the field of numerical control. He received an M.A. degree in mathematics in 1955 from the University of California, Los Angeles, and for 1959-61 was awarded a Fulbright scholarship to the University of Mainz, West Germany. He joined the IBM General Products Division in 1961 to work in applied mathematics and process control at San Jose and transferred to the Los Angeles Scientific Center in 1965. He is a member of the Association for Computing Machinery and Pi Mu Epsilon.

John S. Lew

Research Division, Yorktown Heights, New York

Dr. Lew is a staff member in the mathematical sciences department at the Thomas J. Watson Research Center, where he joined IBM in 1970. He received a B.S. in physics from Yale University in 1955 and a Ph.D. in physics from Princeton University in 1960. He was a project officer, 1960-62, at the Air Force Special Weapons Center, Kirtland Air Force Base, New Mexico, a C.L.E. Moore Instructor in Mathematics, 1962-64, at the Massachusetts Institute of Technology, and an Assistant Professor of Applied Mathematics, 1964-70, at Brown University. He is a member of the Mathematical Association of America and the Society for Industrial and Applied Mathematics.

H. Joseph Myers

Data Processing Division, Palo Alto, California

Mr. Myers is a senior programmer at the Palo Alto Scientific Center. He joined IBM as an applied science representative in 1959 and since that time has served in a variety of positions. His programming experience includes analytical and simulation modeling; supervisory and I/O system implementation; and design and implementation of programming language translators. He received a B.S. degree in 1953 and an M.S. degree in 1954, both from Massachusetts Institute of Technology in chemical engineering. Mr. Myers is a member of the Association for Computing Machinery and was an ACM National Lecturer in 1970.

Donald P. Pazel

Research Division, Yorktown Heights, New York

Mr. Pazel is currently a member of the computing systems department at the Thomas J. Watson Research Center. He joined IBM in 1973 at Morris Plains, New Jersey, where he worked as a programmer on the Safeguard project for the Federal Systems Division. Mr. Pazel graduated maxima cum laude from LaSalle College, Philadelphia, in 1972 with a B.A. degree in mathematics and received an M.S. degree in mathematics from the University of Virginia in 1973. He is a member of the Mathematical Association of America.

Jochen W. Schneider

IBM Germany, Sindelfingen

Mr. Schneider is a staff member at the German Manufacturing Technology Center and has been with IBM since 1968. He has worked in the fields of thin film preparation, magneto-optics, and magnetic recording media. He spent one year in the advanced technology department of the General Products Division at San Jose and more recently was at the Thomas J. Watson Research Center, where he worked on preparation of amorphous magnetic bubble films. He is now active in this field at the Sindelfingen Technology Center. He received his Dipl.-Phys. degree from the Technische Hochschule, Darmstadt.

Oliver S. Spencer

System Communications Division, Kingston, New York

Dr. Spencer is an advisory physicist in the FET processing group, where he is currently studying the application of chemical vapor deposition and ion implantation to the fabrication of MOSFET large-scale integrated circuits. He joined IBM in 1960 after receiving a B.S. and an M.S. in physics from Louisiana Technical University, Ruston, in 1959 and 1960, respectively. He received a Ph.D. in solid state physics from the University of Oklahoma, Norman, in 1968. His previous research and development experience was in the areas of x-ray fluorescence, infrared spectroscopy, and nuclear magnetic resonance. He has been associated with a number of display development efforts, most recently with the plasma display panel, and earlier with work in xerographic imaging. Dr. Spencer is a member of the Electrochemical Society.

Frank E. Talke

Research Division, San Jose, California

Dr. Talke joined IBM in 1969 at the Research Laboratory and has been manager of a mechanics and hydrodynamics project in the applied science complex in San Jose since 1971. In this capacity he has been studying the mechanical aspects of magnetic recording technology. In 1971 he received an IBM Outstanding Contribution Award for his investigations in friction, wear, and lubrication of disk files. Dr. Talke has also taught graduate courses in friction wear and lubrication at the University of Santa Clara, California. He attended the University of Stuttgart, Germany, where he received a Diplom-Ingenieur degree (MS) in applied mechanics in 1965, and the University of California at Berkeley, where he received a Ph.D. in mechanical engineering in 1969.

Raymond C. Tseng

Research Division, San Jose, California

Dr. Tseng is a research staff member of the mechanics and hydrodynamics group in the exploratory technology department at the San Jose Research Laboratory, where he joined IBM in 1969. His education includes a B.S. degree in civil engineering from the National Taiwan University, Taiwan, China, in 1961; an M.S. degree in aerospace engineering from the University of Colorado, Boulder, in 1964; and a Ph.D. in mechanical engineering from the University of California, Berkeley, in 1969. His research interests include magnetic recording, gas lubrication and tribology. He is a member of Sigma Xi and the Institute of Electrical and Electronics Engineers.

Yih-O-Tu

Research Division, San Jose, California

Dr. Tu is a member of the applied sciences department at the Research Laboratory in San Jose, where he is working in mathematical simulation of electromechanical devices. He joined IBM in 1959 at the Thomas J. Watson Research Center and transferred to San Jose in 1972. He received an M.S. in 1954 in mechanical engineering from Carnegie Institute of Technology, Pittsburgh, Pa., and a Ph.D. in 1959 in mathematics from Rensselaer Polytechnic Institute, Troy, N.Y. Dr. Tu is a member of the American Mathematical Society, the American Physical Society, the Society of Industrial and Applied Mathematics, the Society of Engineering Sciences, and the American Society of Mechanical Engineers.

Paul P. Wang

System Communications Division, Kingston, New York

Dr. Wang is a development engineer and manages the semiconductor development department of the Kingston laboratory, where his current technical interests include the analysis and basic device study of high-voltage, high-current bipolar transistors. His previous research experience includes work in superconductivity, many body problems, and the theory of phase transitions. He joined the System Development Division, Kingston, in 1970 and in 1973 was on a temporary assignment to the System Products Division in East Fishkill, New York, to extend that work. Dr. Wang received a B.S. degree in physics from National Taiwan University, Taipei, China, in 1964, an M.S. degree in 1967 and a Ph.D. in 1970, both in solid state physics from Carnegie Institute of Technology, Pittsburgh, Pa. He is a member of the Institute of Electrical and Electronics Engineers, the American Physical Society, and Phi Kappa Phi.